

WHAT IS CLAIMED IS:

- 1 1. A crane for freely suspending a load above the ground
2 comprising:
3 (a) a lower crawler adapted for use with an excavator,
4 (b) an upper body adapted for use with an excavator, the
5 upper body having a receptacle adapted to accept an
6 excavator boom,
7 (c) a boom adapted to engage a crane body,
8 (d) an adapter for engaging the receptacle of the excavator
9 upper body as if the adaptor was the excavator boom,
10 the adaptor and the receptacle fixedly secured together
11 such that the adaptor defines a connector for receiving
12 the crane boom in the same manner as the boom would
13 be accepted by a crane body for providing a range of
14 boom angles comparable to the range of boom angles
15 available to the boom connected to the crane body.
- 1 2. The crane as defined in claim 1 wherein the excavator lower
2 crawler comprises a first swivel at a position remote from the ground and
3 a continuous belt drive track for mobilizing the crane over the ground.

1 3. The crane as defined in claim 1 wherein the excavator upper
2 body comprises:

(1) a support member for providing structural integrity for the upper body,

5 (2) a second swivel at a position proximate to the ground,
6 and

(3) a receptacle adapted to accept an excavator boom, the second swivel rotatably engaged with the first swivel of the lower crawler for providing rotation of the upper body upon the lower crawler when the lower crawler is stationary or mobilized.

1 4. The crane as defined in claim 1 wherein the boom comprises:

(1) a distal end having associated therewith at least one lifting device, and

4 (2) a proximate end adapted to engage a crane body.

1 5. The crane as defined in claim 1 wherein the boom is
2 telescoping.

1 6. The crane as defined in claim 1 further comprising a hoist in
2 operative association with the boom.

1 7. The crane as defined in claim 1 further comprising a lifting
2 device in operative association with the boom.

1 8. The crane as defined in claim 1 wherein the lifting device
2 comprises an implement selected from the group of a sheave, a hook, an
3 auxiliary hook, a main block, a whip line and a fast line.

1 ~~18.~~ A crane for freely suspending a load above the ground
2 comprising:

3 (a) a lower crawler adapted for use with an excavator, the
4 lower excavator crawler comprising:

5 (1) a first swivel at a position remote from the
6 ground and

7 (2) a continuous belt drive track for mobilizing the
8 crane over the ground,

9 (b) an upper body adapted for use with an excavator, the
10 upper excavator body comprising:

11 (1) a support member for providing structural
12 integrity for the upper body,

13 (2) a second swivel at a position proximate to the
14 ground, and

15 (3) a receptacle adapted to accept an excavator boom,
16 the second swivel rotatably engaged with the
17 first swivel of the lower excavator crawler for
18 providing rotation of the upper excavator body
19 upon the lower crawler when the lower crawler is
20 stationary or mobilized,

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- 21 (c) a boom adapted to engage a crane body, the crane boom
22 comprising:
23 (1) a distal end having associated therewith at least
24 one lifting device, and
25 (2) a proximate end adapted to engage a crane body,
26 and
27 (d) an adapter for engaging the receptacle of the excavator
28 upper body as if the adaptor was the excavator boom,
29 the adaptor and the receptacle fixedly secured together
30 such that the adaptor defines a connector for receiving
31 the crane boom in the same manner as the crane boom
32 would be accepted by a crane body for providing a range
33 of boom angles comparable to the range of boom angles
34 available to the boom connected to a crane body.

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~~10.~~ The crane as defined in claim ¹~~9~~ wherein the boom is
2 telescoping.

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~~11.~~ The crane as defined in claim ¹~~9~~ further comprising a hoist in
2 operative association with the crane boom.

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~~12.~~ The crane as defined in claim ¹~~9~~ further comprising a lifting
2 device in operative association with the crane boom.

13. The crane as defined in claim 1 wherein the lifting device comprises an implement selected from the group of a sheave, a hook, an auxiliary hook, a main block, a whip line and a fast line.

14. A method for adapting an excavator for use as a crane, ~~the excavator comprising a lower crawler, an upper body and a receptacle secured to the upper body for receiving an excavation boom associated with an excavation implement, and a crane boom associated with a crane implement,~~ the method comprising the steps of:

(a) disengaging, if connected, the excavator boom from the receptacle,

(b) engaging an adaptor with the receptacle secured to the upper excavator body, the adaptor defining a connector for receiving the crane boom in the same manner as the crane boom would be accepted by a crane body for providing a range of boom angles comparable to the range of boom angles available to the boom connected to the crane body,

(c) engaging the crane boom with the connector, and
(d) articulating the crane boom with respect to the connector in such a manner as to provide an excavator-crane apparatus having the same operating and stability characteristics as a crane.

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- 1 ~~15. A method for determining a luffing triangle effective to~~
2 ~~provide a full or near-full capacity crane having a boom with a foot, a~~
3 ~~cylinder and a frame, the luffing triangle method comprising the steps of:~~
4 (a) ~~locating a boom foot position on the frame,~~
5 (b) ~~locating a cylinder frame position on the frame such~~
6 ~~that the boom foot position and the cylinder frame~~
7 ~~position are required to be adequately spaced to provide~~
8 ~~a base for supporting the desired crane capacity, and~~
9 (c) ~~locating a boom/cylinder position with respect to the~~
10 ~~boom foot position and the cylinder frame position such~~
11 ~~that a sufficient range of motion is provided and a~~
12 ~~sufficient leverage is provided for the desired crane~~
13 ~~capacity.~~

1 16. An article of manufacture for adapting an excavator for use as
2 a full or near-full capacity crane, the excavator comprising a lower
3 crawler, an upper body and a receptacle secured to the upper body for
4 receiving an excavation boom associated with an excavation implement, a
5 cylinder and a crane boom with a foot associated with a crane implement,
6 the article comprising a body member, the body member comprising:

- 7 (a) a boom foot securing device for engaging the frame,
8 (b) a cylinder frame securing device for engaging the frame
9 such that the boom foot securing device and the
10 cylinder frame securing device are required to be
11 adequately spaced to provide a base for supporting the
12 desired crane capacity, and
13 (c) a boom/cylinder securing device with respect to the
14 boom foot securing device and the cylinder frame
15 securing device such that a sufficient range of motion is
16 provided and a sufficient leverage is provided for the
17 desired crane capacity.